

English-based Program												
Department	Research Area	Research Instruction	Application Code		Main Supervisor	Vice Supervisor						
			Master	Doctor								
Department of Electronic and Physical Systems	Condensed Matter Science	Research on Advanced Theoretical Physics for Condensed Matter	Research fields are quantum field theory, the foundation of quantum mechanics and particle physics. As recent topics, we study theoretically on constructing thermal field theory and on Bose-Einstein condensation phenomena of alkali atoms under thermal situations.	R02	-	Professor	Doctor of Science (Waseda University)	YAMANAKA, Yoshiya	yamanaka@waseda.jp			
Department of Electronic and Physical Systems	Condensed Matter Science	Research on Quantum Theory for Solids	Basic researches on the properties of solid state materials have been carried out by using the quantum theory. Especially, influence of vacancy and dopant in an atomic scale on the properties of solids has been studied.	R03	R53	Professor	Doctor of Engineering (Waseda University)	YAMAMOTO, Tomoyuki	tymt@waseda.jp			
Department of Electronic and Physical Systems	Condensed Matter Science	Research on High Temperature Physical Chemistry	The researches on the high temperature physical chemistry of materials, especially the measurement of thermodynamic data, the reaction-diffusion phenomena and the behavior of the multiphase flow have been carried out.	R04	R54	Professor	Doctor of Engineering (The University of Tokyo)	ITO, Kimihisa	itokimi@waseda.jp			
Department of Electronic and Physical Systems	Electronics	Research on Molecular Nano-engineering	Students will study both the conventional top-down processes and the emerging bottom-up processes, and integrate them into novel processes for fabrication of single-atom transistors, single-photon emitters and apply them for quantum information processing and quantum-sensing.	R06	R56	Professor	Doctor of Engineering (Waseda University)	TANII, Takashi	tanii@waseda.jp			
Department of Electronic and Physical Systems	Electronics	Research on Nano-device	Nano-devices are going to be deployed not only to information technology, but also to environmental and bio application. In this vision, nanoelectronics based on nano-carbon materials such as nano-diamond, carbon nanotube, graphene or gate stack materials involving high-k dielectric and metal gate have been investigated. We are developing biosensors with biocompatibility and chemical functionality, nano scaled device, high power high frequency transistors and superconducting functional devices.	R07	R57	Professor	Doctor of Engineering (Waseda University)	KAWARADA, Hiroshi	kawarada@waseda.jp			
Department of Electronic and Physical Systems	Electronics	Research on Nano and Microsystem	Microsensors, microactuators, micro flow devices and microsystems are studied and developed by nanotechnologies and micromachinings based on semiconductor integrated circuit fabrication technologies. These micro devices and microsystems are applied for chemical, biochemical, cell biology, medical, environmental and space applications.	R08	R58	Professor	Doctor of Engineering (Tohoku University)	SHOJI, Shuichi	shojis@waseda.jp			

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Department of Electronic and Physical Systems	Electronics	Research on Nano Material Infomatics	Semiconductor nano devices for green electronics, such as ultra-low energy consumption devices and energy harvesting devices, are to be developed in both experimental and theoretical calculation approaches. Utilizing computational physics methods, structures, electronic properties and chemical reactions are investigated in atomic and molecular levels, aiming at a fine control of nanoscale fabrication processes.	R09	R59	Professor	Doctor of Engineering (Waseda University)	WATANABE, Takanobu	watanabe-t@waseda.jp			
Department of Electronic and Physical Systems	Photonics	Research on Functional Photonics	Functional photonic devices for optical fiber communications and optical information processing such as semiconductor lasers, optical switches, nonlinear devices using quantum effects, optical sensors and so on. Device design, crystal growth, fabrication of functional photonic devices, evaluation of optical phenomena and device performances, and system applications are studied.	R10	-	Professor	Doctor of Engineering (Tokyo Institute of Technology)	UTAKA, Katsuyuki	utaka@waseda.jp			
Department of Electronic and Physical Systems	Photonics	Research on Radio Optical Convergence Systems	We will study high-speed telecommunication and high-performance sensing based on convergence of radio and optical technologies, focusing on photonic millimeter-wave generation, high-speed precise lightwave control, optical modulation/demodulation devices, etc.	R19	R69	Professor	Doctor of Engineering (Kyoto University)	KAWANISHI, Tetsuya	kawanishi@waseda.jp			
Department of Electronic and Physical Systems	Information Systems	Research on Design and Analysis Systems	To create advanced computers, information communication systems, etc., SoC (System on a Chip) design, network systems, medical data processing, and CAD (Computer-Aided Design) algorithms for integrated systems have been studied.	R11	R61	Professor	Doctor of Engineering (Waseda University)	YANAGISAWA, Masao	myanagi@waseda.jp			
Department of Electronic and Physical Systems	Information Systems	Research on Integrated System Design	We are exploring various techniques for future intelligent society, and our current research activities mainly focus on intelligent systems (including both HW and SW for machine learning, neural networks, etc), self-powered wearable systems, and hardware security and trustworthy computing.	R13	R63	Professor	Doctor of Engineering (Waseda University)	SHI, Youhua	shi@waseda.jp	Professor	Doctor of Engineering (Waseda University)	YANAGISAWA, Masao
Department of Electronic and Physical Systems	Information Systems	Research on High Level Verification	Based on logic function manipulation techniques, high level design methods of hardware modules and their correctness verification methods have been studied, such as arithmetic circuit design and verification, timing design and verification, low-power design and verification, and 3D LSI design and verification.	-	R68	Professor	Doctor of Engineering (Kyoto University)	KIMURA, Shinji	shinji_kimura@waseda.jp	Professor	Doctor of Engineering (Waseda University)	YANAGISAWA, Masao
Department of Electronic and Physical Systems	Information Systems	Research on Wireless Communication Circuit Technologies	Microwave and Millimeter-wave RF LSIs are studied in order to achieve high performance next generation wireless communication systems. In particular, highly linear and high efficiency power amplifiers, low-phase-noise and wideband oscillators, and low-power mixers using Si CMOS and SiGe BiCMOS technologies are of interest.	-	R70	Professor	Doctor of Philosophy (Kobe University)	YOSHIMASU, Toshihiko	yoshimasu@waseda.jp	Professor	Doctor of Engineering (Waseda University)	YANAGISAWA, Masao